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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/772,294

02/06/2004

Takeshi Kikawa

NITT.0186

4924

7590

02/25/2005

REED SMITH LLP
Suite 1400
3110 Fairview Park Drive
Falls Church, VA 22042

EXAMINER

MONDT, JOHANNES P

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/772,294 | KIKAWA ET AL. | |
| | Examiner | Art Unit | |
| | Johannes P. Mondt | 2826 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 12-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2/6/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. **Claims 1-8 and 12-21** have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected laser diode invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 14, 2005.

Information Disclosure Statement

The examiner has considered the items listed in the Information Disclosure Statement filed February 6, 2004.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the existence of two separate or distinct aluminum oxide films lacking in oxygen on one and the same facet (as implied by the limitations of claim 10, in particular: lines 3-5 of claim 10 and lines 7-11 of independent claim 9) must be shown or the feature canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The Specification is objected to for the following reasons: the sentence on *page 5, lines 20 – page 6, line 3*, is *inconsistent* in equating a case defined by the phrase "the oxygen composition of aluminum oxide is 10% or less of the stoichiometric composition" with the chemical formula $\text{Al}_2\text{O}_{3-x}$ ($x \leq 0.3$). Said phrase and chemical formula cannot be both correct. In particular, the case when the oxygen composition is 10% or less of the stoichiometric composition is equivalent to $3-x \leq 0.3$, that is: $x \geq 2.7$. From the context defined by the remainder of the Specification it is clear that the chemical formula rather than the phrase is correct. Therefore, the phrase should be replaced by "the oxygen composition of the aluminum oxide is less than the stoichiometric composition, by an amount not exceeding 10% of the stoichiometric amount of oxygen".

Furthermore, the Specification is objected to for lack of definition of "COD" in "COD deterioration" (page 8, lines 16-17). Said definition could be inserted on page 8,

lines 4-5 by replacing "catastrophic optical damage" (lines 4-5 of page 8) by "catastrophic optical damage (COD)".

Furthermore, the Specification is objected to for lack of disclosure of the subject matter of dependent claim 10: nowhere in the Specification does Applicant show two steps, one "forming a first insulator film in contact with said facet of the semiconductor....wherein the first insulator film comprises aluminum oxide lacking in oxygen", and another step of "depositing an aluminum oxide film (line 6 of claim 10) lacking oxygen (line 4). None of the Figures shows two aluminum oxide films lacking in oxygen on the same facet.

Claim Objections

3. ***Claims 9-11*** are objected to because of the following informalities: the wording "with the semiconductor facet" (line 7 of claim 9) should be replaced by "with said facet of the semiconductor". Appropriate correction is required.

4. ***Claims 9-11*** are objected to because of the following informalities: the wording "an insulator film" (line 8 of claim 9) should be replaced by: "a second insulator film". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. ***Claim 11*** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the composition of the aluminum oxide has

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already been stipulated as $\text{Al}_2\text{O}_{3-x}$ through claim 9, while any non-zero intrusion of argon into said aluminum oxide up to 1 atomic weight percentage as claimed would result in a composition $\text{Al}_2\text{Ar}_y\text{O}_{3-x}$, with non-zero y, which is incompatible with the composition already stipulated, i.e., with $\text{Al}_2\text{O}_{3-x}$.

Allowable Subject Matter

7. Subject to removal of the grounds for the above made objections *claim 9 and any properly disclosed claim* dependent thereon is allowed. The following is a statement of reasons for the indication of allowable subject matter: closest to prior art found to date is Kaya et al (6,795,480 B1), evidently realizing the problems of excess oxygen in aluminum oxide layers on semiconductor laser facets and disclosing the formation of an aluminum oxide layer 18 on a facet of a laser of the preamble type (Figure 2, title, abstract), teaching avoidance of excess oxygen in said aluminum oxide film, but teaching adherence to the stoichiometric ratio (i.e., Al_2O_3), i.e., $x=0$, instead of the teaching of $\text{Al}_2\text{O}_{3-x}$ with x between 0.03 and 0.3 inclusive as claimed by Applicants. Applicants, on the other hand, clearly provided technical argumentation in support of both limits of the range for the stoichiometric parameter, as evidenced by Figures 11 and 15, and their discussion on pages 6-8.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
February 21, 2005

Patent Examiner:

A handwritten signature in black ink, appearing to read 'J. Mondt', with a stylized flourish at the end.

Johannes Mondt (Art Unit: 2826).